

## PATENT ABSTRACTS OF JAPAN

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(71)Applicant : KOFU NIPPON DENKI KK

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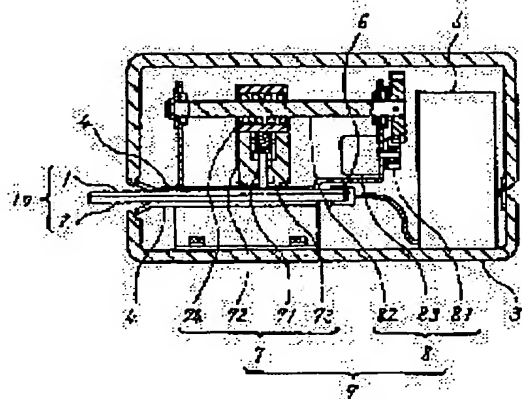
(72)Inventor : ENARI SHIGEAKI  
ASAKAWA KAZUO

## (54) CARD WRITING DEVICE

## (57)Abstract:

**PROBLEM TO BE SOLVED:** To discriminate information stored in a semiconductor memory judging from the outward appearance without rewriting or repasting a label on a card by writing a display, which can be recognized from the outward appearance, for discriminating the information written in the semiconductor memory on the card in an erasable state while writing the information in the semiconductor memory in the card.

**SOLUTION:** A memory card 2 or card 10 formed by adhering a rewritable card 1 on an IC card is inserted into a guide 4, the memory card 2 and a control part 5 are connected by a connector 6 to write information on the memory card 2, and a thermal head 71 is moved onto the rewritable card 1 by a mechanism such as a screw shaft 82; and the control part 5 writes the display for discriminating the information written on the memory card 2 on the rewritable card 1 in an erasable state.



## LEGAL STATUS

[Date of request for examination] 26.12.1995

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CLAIMS

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[Claim(s)]

[Claim 1] Card write-in equipment characterized by including the data write-in section which writes data in the semiconductor memory prepared in the card electrically, and the printing section to which writing and elimination also give an indication which can be recognized visually [ the lilac ITABURU thermal recording section prepared in said card ].

[Claim 2] The data write-in section which writes data in the semiconductor memory which has the contact electrically connected to the terminal of the card on the card installation section which lays a card, and this card installation section, and was prepared in said card electrically, Card write-in equipment characterized by including the printing section to which writing and elimination also give an indication which is made to move a thermal head onto the lilac ITABURU thermal recording section prepared in the card on said card installation section, and can be recognized visually [ said lilac ITABURU thermal recording section ].

[Claim 3] It is card write-in equipment according to claim 2 characterized by writing and elimination giving an indication of the lilac ITABURU thermal recording section which will be the semiconductor memory which the data write-in section connected contact to the terminal of the memory card prepared in the card electrically, and was built in said memory card from the RIRAITA bull card with which writing and the printing section pasted up data on said memory card.

[Claim 4] It is card write-in equipment according to claim 2 characterized by writing and elimination giving an indication of the lilac ITABURU thermal recording section which will be the semiconductor memory which the data write-in section pasted up contact on the terminal of the IC card prepared in the card electrically, and was built in said IC card from the RIRAITA bull card with which writing and the printing section pasted up data on said IC card.

[Claim 5] It is card write-in equipment according to claim 1, 2, 3, or 4 characterized by the display of said lilac ITABURU thermal recording section rewriting the display for identifying the data written in semiconductor memory when rewriting the data of writing and said semiconductor memory in the lilac ITABURU thermal recording section.

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[Translation done.]

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DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the card write-in equipment which writes data in the semiconductor memory prepared especially in the card about the equipment which writes data in the card which has the function to memorize data.

[0002]

[Description of the Prior Art] This conventional kind of card write-in equipment only wrote data in the semiconductor memory prepared in the card. Therefore, even if it saw the card which wrote in data with card write-in equipment, it was not discriminable from the appearance what kind of data are written in the card. Then, conventionally, the display label of extent which can understand the contents written in after the write-operation of the data to the card by card write-in equipment was manually stuck on the card.

[0003]

[Problem(s) to be Solved by the Invention] There was no method of identifying that the information for which only the means of \*\*\*\*\* stored in the card another label which changed the written contents of the label currently stuck on the card, or changed written contents at the card was updated when the information stored in the card was rewritten with this conventional card write-in equipment, and while it is uncertain, since it becomes handicraft, a great effort had required. Moreover, when the above-mentioned activity was neglected, the written contents of the information stored in the card and the label stuck on the card will not be in agreement, and the various faults by using the information which was mistaken using the mistaken card had occurred.

[0004]

[Means for Solving the Problem] The card write-in equipment of this invention is equipped with the data write-in section which writes data in the semiconductor memory prepared in the card electrically, and the printing section to which writing and elimination also give an indication which can be recognized visually [ the lilac ITABURU thermal recording section prepared in said card ].

[0005] The data write-in section which writes data in the semiconductor memory which the card write-in equipment of this invention has the contact electrically connected to the terminal of the card on the card installation section which lays a card, and this card installation section, and was prepared in said card electrically. It has the printing section to which writing and elimination also give an indication which is made to move a thermal head onto the lilac ITABURU thermal recording section prepared in the card on said card installation section, and can be recognized visually [ said lilac ITABURU thermal recording section ].

[0006] Writing and elimination can also indicate the lilac ITABURU thermal recording section which writing and the printing section turn into from the RIRAITA bull card pasted up on said memory card in data to the semiconductor memory which, as for the data write-in section, the card write-in equipment of this invention connected contact to the terminal of the memory card prepared in the card electrically, and was built in said memory card.

[0007] Writing and elimination can also indicate the lilac ITABURU thermal recording section which writing and the printing section turn into from the RIRAITA bull card adhered to said IC card in data to the semiconductor memory by which the data write-in section pasted up contact on the terminal of the IC card prepared in the card electrically, and the card write-in equipment of this invention was built in said IC card.

[0008] When rewriting the data of writing and said semiconductor memory in the lilac ITABURU thermal recording section, the display of said lilac ITABURU thermal recording section can also rewrite a display for the card write-in equipment of this invention to identify the data written in semiconductor memory.

[0009]

[Embodiment of the Invention] Next, this invention is explained with reference to a drawing.

[0010] Drawing 1 is the sectional side elevation of the card write-in equipment of the gestalt of operation of this invention.

[0011] The guide 4 which carries out guidance support of the card 10 which consists of a RIRAITA bull card 1 which has the layer which consists of the lilac ITABURU thermal recording ingredient which one side of the memory card 2 which built in semiconductor memory (illustration abbreviation), and a memory card 2 pasted up is formed in the body 3 of equipment in contact with opening in which the end was prepared by the body 3 of equipment. The terminal linked to semiconductor memory is prepared in one side face of a memory card 2, and the connector 6 which connects to the guide 4 other end a control section 5 and the terminal of a memory card 2 inserted in the guide 4 is arranged.

[0012] The printing section 9 of the sensible-heat type RIRAITA bull card which consists of the thermal head migration means 8 which consists of a thermal head 71, the thermal head supporter material 72, a spring 73, the thermal head supporter 7 that consists of lead blocks 74 and a gear train 81, a screw shaft 82, and a drive motor 83 is formed in the upper part of the guide 4 within the body 3 of equipment.

[0013] A screw shaft 82 is supported to revolve by the bracket of immobilization to the body 3 of equipment, is arranged in parallel with a guide 4, and is rotated by the drive motor 83 through the gear train 81. The lead block 74 is guided at the shaft which is not illustrated, and moves in the direction of a screw shaft 82 according to rotation of a screw shaft 82. Although a thermal head 71 is held at the lead block 74 so that it can move up and down, and energized downward with the spring 73, it is made to avoid out of a guide 4 at the time of insertion to the guide 4 of a card 10 by the cam mechanism etc. A thermal head 71 moves by the drive of a drive motor 83 in the RIRAITA bull card 1 top, while a pressure welding is carried out to the RIRAITA bull card 1 of the card 10 inserted in the guide 4.

[0014] When rewriting the information stored in the memory card 2, a card 10 is inserted in a guide 4, a connector 6 is equipped with the terminal of a memory card 2, a memory card 2 and a control section 5 are connected, and access to a memory card 2 from a control section 5 is enabled. In case new information is written in a memory card 2 by the control section 5, the display for identifying the information which wrote the contents of the information written in the memory card by the control section 5 in the memory cards 2, such as information edited to the level which can be recognized to an operator, is sent to the printing section 9, the thermal head directions section 7 and the thermal head migration means 8 operate by this new display, and the display of the RIRAITA bull card 1 of a card 10 is rewritten.

[0015] Although the gestalt of this operation explained the method which a thermal head moves to rewriting the display of the RIRAITA bull card 1, it is satisfactory in any way also as a method which moves a card and fixes a thermal head.

[0016] Drawing 2 is the sectional side elevation of the card write-in equipment of the gestalt of other operations of this invention.

[0017] The guide 25 which carries out guidance support of the card 30 which consists of a RIRAITA bull card 21 which has the layer which consists of the lilac ITABURU thermal recording ingredient pasted up on one side of IC card 22 having the microcomputer (illustration abbreviation) which controls semiconductor memory and this semiconductor memory, and IC card 22 is formed in the body 29 of equipment in contact with opening in which the end was prepared by the body 29 of equipment.

[0018] The terminal linked to a microcomputer is prepared in the front face of IC card 22, and the contact (illustration abbreviation) for connecting this terminal and the IC card write-in equipment 24 which writes in and eliminates the data of IC card 22 is formed in the guide 25.

[0019] The printing section 28 of the sensible-heat type RIRAITA bull card which consists of the thermal head migration means 27 which consists of a thermal head 261, the thermal head supporter material 262, a spring 263, the thermal head supporter 26 that consists of lead blocks 264 and a gear train 271, a screw shaft 272, and a drive motor 273 like the gestalt shown in drawing 1 is formed in the upper part of the guide 25 within the body 29 of equipment.

[0020] When rewriting the information stored in IC card 22, a card 30 is inserted in a guide 25, today's is carried out to the stopper which is not illustrated, a card 30 is positioned and access to IC card 22 from IC card write-in equipment 24 is enabled based on the information from a control section 23. In case new information is written in IC card 22 by the control section 23, the display for identifying the information which wrote the contents of the information written in IC card 22 by the control section 23 in IC cards 22, such as information edited to the level which can be recognized to an operator, is sent to the printing section 28, the thermal head supporter 26 and the thermal head migration means 27 operate by this new display, and the display of the RIRAITA bull card 21 of a card 30 is rewritten.

[0021] A card is moved to rewriting the display of the RIRAITA bull card 21 also with the gestalt of this operation, and it is satisfactory in any way also as a method which fixes a thermal head.

[0022]

[Effect of the Invention] As explained above, the card write-in equipment of this invention can be visually written in possible [ elimination of the display which can be recognized ], while writing data in the card which prepared semiconductor memory and the lilac ITABURU thermal recording section electrically. moreover, since the card write-in equipment of this invention was written in the lilac ITABURU sensible-heat sections, such as a RIRAITA bull card which pasted up the display which identifies the information written in semiconductor memory, such as a memory card and an IC card, and which is identified in appearance on the memory card etc., possible [ elimination ], stick a label on a card or [ whether when the information stored in semiconductor memory is rewritten, the written contents of the label currently stuck are changed, and ] Or since the contents written in semiconductor memory, without taking the means of \*\*\*\*\* against another label which changed written contents are discriminable, the great effort by handicraft can be lost.

[0023] Moreover, since it is lost that the written contents of information and the label stored in semiconductor memory are not in agreement, it has the effectiveness that the various faults generated conventionally can be prevented, by using the information which was mistaken using the mistaken card.

[Translation done.]

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TECHNICAL FIELD

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[Field of the Invention] This invention relates to the card write-in equipment which writes data in the semiconductor memory prepared especially in the card about the equipment which writes data in the card which has the function to memorize data.

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PRIOR ART

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[Description of the Prior Art] This conventional kind of card write-in equipment only wrote data in the semiconductor memory prepared in the card. Therefore, even if it saw the card which wrote in data with card write-in equipment, it was not discriminable from the appearance what kind of data are written in the card. Then, conventionally, the display label of extent which can understand the contents written in after the write-operation of the data to the card by card write-in equipment was manually stuck on the card.

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EFFECT OF THE INVENTION

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[Effect of the Invention] As explained above, the card write-in equipment of this invention can be visually written in possible [ elimination of the display which can be recognized ], while writing data in the card which prepared semiconductor memory and the lilac ITABURU thermal recording section electrically. Moreover, the card write-in equipment of this invention is because of having made it write in the lilac ITABURU sensible-heat sections, such as a RIRAITA bull card which pasted up the display which identifies the information written in semiconductor memory, such as a memory card and an IC card, and which is identified in appearance on the memory card etc., possible [ elimination ]. Since the contents written in semiconductor memory, without taking the means of \*\*\*\*\* against another label which changed the written contents of the label currently stuck or changed written contents can be identified when a label is stuck on a card or the information stored in semiconductor memory is rewritten, the great effort by handicraft can be lost.

[0023] Moreover, since it is lost that the written contents of information and the label stored in semiconductor memory are not in agreement, it has the effectiveness that the various faults generated conventionally can be prevented, by using the information which was mistaken using the mistaken card.

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TECHNICAL PROBLEM

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[Problem(s) to be Solved by the Invention] There was no method of identifying that the information for which only the means of \*\*\*\*\* stored in the card another label which changed the written contents of the label currently stuck on the card, or changed written contents at the card was updated when the information stored in the card was rewritten with this conventional card write-in equipment, and while it is uncertain, since it becomes handicraft, a great effort had required. Moreover, when the above-mentioned activity was neglected, the written contents of the information stored in the card and the label stuck on the card will not be in agreement, and the various faults by using the information which was mistaken using the mistaken card had occurred.

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MEANS

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[Means for Solving the Problem] The card write-in equipment of this invention is equipped with the data write-in section which writes data in the semiconductor memory prepared in the card electrically, and the printing section to which writing and elimination also give an indication which can be recognized visually [ the lilac ITABURU thermal recording section prepared in said card ].

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[Embodiment of the Invention] Next, this invention is explained with reference to a drawing.

[0010] Drawing 1 is the sectional side elevation of the card write-in equipment of the gestalt of operation of this invention.

[0011] The guide 4 which carries out guidance support of the card 10 which consists of a RIRAITA bull card 1 which has the layer which consists of the lilac ITABURU thermal recording ingredient which one side of the memory card 2 which built in semiconductor memory (illustration abbreviation), and a memory card 2 pasted up is formed in the body 3 of equipment in contact with opening in which the end was prepared by the body 3 of equipment. The terminal linked to semiconductor memory is prepared in one side face of a memory card 2, and the connector 6 which connects to the guide 4 other end a control section 5 and the terminal of a memory card 2 inserted in the guide 4 is arranged.

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[0013] A screw shaft 82 is supported to revolve by the bracket of immobilization to the body 3 of equipment, is arranged in parallel with a guide 4, and is rotated by the drive motor 83 through the gear train 81. The lead block 74 is guided at the shaft which is not illustrated, and moves in the direction of a screw shaft 82 according to rotation of a screw shaft 82. Although a thermal head 71 is held at the lead block 74 so that it can move up and down, and energized downward with the spring 73, it is made to avoid out of a guide 4 at the time of insertion to the guide 4 of a card 10 by the cam mechanism etc. A thermal head 71 moves by the drive of a drive motor 83 in the RIRAITA bull card 1 top, while a pressure welding is carried out to the RIRAITA bull card 1 of the card 10 inserted in the guide 4.

[0014] When rewriting the information stored in the memory card 2, a card 10 is inserted in a guide 4, a connector 6 is equipped with the terminal of a memory card 2, a memory card 2 and a control section 5 are connected, and access to a memory card 2 from a control section 5 is enabled. In case new information is written in a memory card 2 by the control section 5, the display for identifying the information which wrote the contents of the information written in the memory card by the control section 5 in the memory cards 2, such as information edited to the level which can be recognized to an operator, is sent to the printing section 9, the thermal head directions section 7 and the thermal head migration means 8 operate by this new display, and the display of the RIRAITA bull card 1 of a card 10 is rewritten.

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display of the RIRAITA bull card 1, it is satisfactory in any way also as a method which moves a card and fixes a thermal head.

[0016] Drawing 2 is the sectional side elevation of the card write-in equipment of the gestalt of other operations of this invention.

[0017] The guide 25 which carries out guidance support of the card 30 which consists of a RIRAITA bull card 21 which has the layer which consists of the lilac ITABURU thermal recording ingredient pasted up on one side of IC card 22 having the microcomputer (illustration abbreviation) which controls semiconductor memory and this semiconductor memory, and IC card 22 is formed in the body 29 of equipment in contact with opening in which the end was prepared by the body 29 of equipment.

[0018] The terminal linked to a microcomputer is prepared in the front face of IC card 22, and the contact (illustration abbreviation) for connecting this terminal and the IC card write-in equipment 24 which writes in and eliminates the data of IC card 22 is formed in the guide 25.

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[0020] When rewriting the information stored in IC card 22, a card 30 is inserted in a guide 25, today's is carried out to the stopper which is not illustrated, a card 30 is positioned and access to IC card 22 from IC card write-in equipment 24 is enabled based on the information from a control section 23. In case new information is written in IC card 22 by the control section 23, the display for identifying the information which wrote the contents of the information written in IC card 22 by the control section 23 in IC cards 22, such as information edited to the level which can be recognized to an operator, is sent to the printing section 28, the thermal head supporter 26 and the thermal head migration means 27 operate by this new display, and the display of the RIRAITA bull card 21 of a card 30 is rewritten.

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DESCRIPTION OF DRAWINGS

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[Brief Description of the Drawings]

[Drawing 1] It is the sectional side elevation of the card write-in equipment of the gestalt of operation of this invention.

[Drawing 2] It is the sectional side elevation of the card write-in equipment of the gestalt of other operations of this invention.

[Description of Notations]

- 1 RIRAITA Bull Card
- 2 Memory Card
- 4 Guide
- 5 Control Section
- 6 Connector
- 7 Thermal Head Supporter
- 71 Thermal Head
- 8 Thermal Head Migration Means
- 82 Screw Shaft
- 9 Printing Section
- 10 Card
- 21 RIRAITA Bull Card
- 22 IC Card
- 23 Control Section
- 24 IC Card Write-in Equipment
- 25 Guide
- 26 Thermal Head Supporter
- 261 Thermal Head
- 27 Thermal Head Migration Means
- 272 Screw Shaft
- 28 Printing Section
- 30 Card

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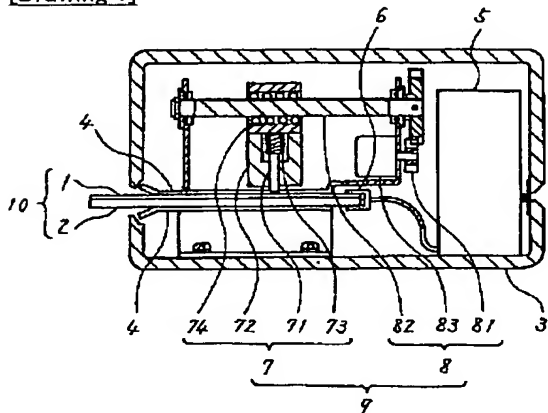
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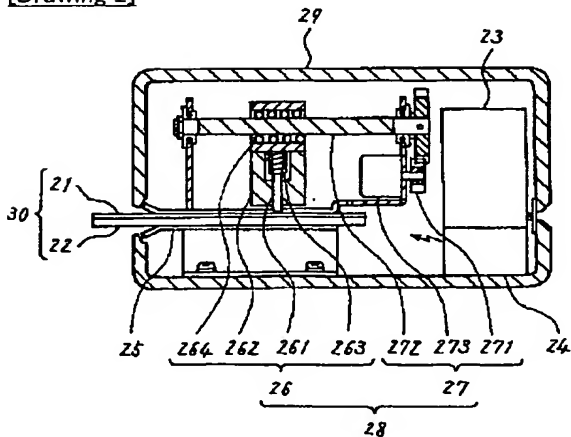
## DRAWINGS

[Drawing 1]



- 1 リライタブルカード
- 2 メモリカード
- 4 ガイド
- 5 制御部
- 6 コネクタ
- 7 サーマルヘッド支持部
- 71 サーマルヘッド
- 8 サーマルヘッド移動手段
- 82 スクリューシャフト
- 9 基
- 10 カード

[Drawing 2]



- 21 ICカード

[Translation done.]

(19) 日本国特許庁 (J P)

(12) 公開特許公報 (A)

(11) 特許出願公開番号

特開平9-179925

(43) 公開日 平成9年(1997)7月11日

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G 0 6 K 1/20			G 0 6 K 1/20	
B 4 2 D 15/10	5 2 1		B 4 2 D 15/10	5 2 1
G 0 6 K 17/00			G 0 6 K 17/00	B
19/08			19/00	F

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(22) 出願日 平成7年(1995)12月26日

(71) 出願人 000168285

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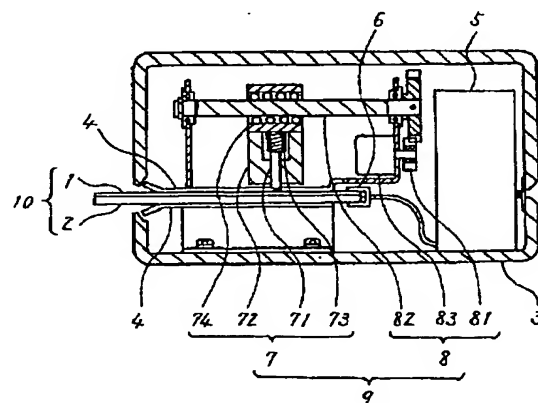
(74) 代理人 弁理士 京本 直樹 (外2名)

(54) 【発明の名称】 カード書き込み装置

(57) 【要約】

【課題】 半導体メモリを内蔵するカードに、半導体メモリに情報を書込むと同時にそのカードに半導体メモリに書込んだ情報を識別するための外観から認識できる表示を消去可能に書込むことにより、カードへのラベルの書換え、貼替えといった作業なしに半導体メモリの格納情報の外観からの識別を可能とする。

【解決手段】 メモリカード2またはICカードにリライタブルカード2を接着したカード10をガイド4に挿入し、メモリカード2と制御部5とをコネクタ6で接続してメモリカード2に情報を書き込み、サーマルヘッド71をスクリュウシャフト82等の機構によりリライタブルカード2上に移動させ、制御部5によりメモリカード2に書き込んだ情報を識別するための表示をリライタブルカード1に消去可能に書込む。



- 1 リライタブルカード
- 2 メモリカード
- 4 ガイド
- 5 制御部
- 6 コネクタ
- 7 サーマルヘッド支持部
- 71 サーマルヘッド
- 8 サーマルヘッド移動手段
- 82 スクリューシャフト
- 9 印部
- 10 カード

## 【特許請求の範囲】

【請求項 1】 カードに設けられた半導体メモリに電氣的にデータを書込むデータ書込部と、前記カードに設けられたリライタブル感熱記録部の視覚的に認識できる表示を書込み、また消去もする印字部とを含むことを特徴とするカード書込み装置。

【請求項 2】 カードを載置するカード載置部と、このカード載置部上のカードの端子に電氣的に接続するコンタクトを有し前記カードに設けられた半導体メモリに電氣的にデータを書込むデータ書込部と、前記カード載置部上のカードに設けられたリライタブル感熱記録部に

10 サーマルヘッドを移動させ前記リライタブル感熱記録部の視覚的に認識できる表示を書込み、また消去もする印字部とを含むことを特徴とするカード書込み装置。

【請求項 3】 データ書込部はカードに設けられたメモリカードの端子にコンタクトを電氣的に接続し前記メモリカードに内蔵された半導体メモリにデータを書込み、印字部は前記メモリカードに接着されたリライタブルカードからなるリライタブル感熱記録部の表示を書込み、また消去もすることを特徴とする請求項 2 記載のカード

20 書込み装置。

【請求項 4】 データ書込部はカードに設けられた IC カードの端子にコンタクトを電氣的に接続し前記 IC カードに内蔵された半導体メモリにデータを書込み、印字部は前記 IC カードに接着されたリライタブルカードからなるリライタブル感熱記録部の表示を書込み、また消去もすることを特徴とする請求項 2 記載のカード書込み装置。

【請求項 5】 半導体メモリに書込むデータを識別するための表示をリライタブル感熱記録部に書込み、前記半導体メモリのデータを書換える時は前記リライタブル感熱記録部の表示も書換えることを特徴とする請求項 1、2、3 または 4 記載のカード書込み装置。

## 【発明の詳細な説明】

## 【0001】

【発明の属する技術分野】本発明は、データを記憶する機能を有するカードにデータを書込む装置に関し、特にカードに設けられた半導体メモリにデータを書込むカード書込み装置に関する。

## 【0002】

【従来の技術】従来のこの種のカード書込み装置はカードに設けられた半導体メモリにデータを書込むだけであった。従ってカード書込み装置でデータを書込んだカードを見ても外観からではそのカードにどんなデータが書込まれているか識別できなかった。そこで従来は、カード書込み装置によるカードへのデータの書込み操作後に書込んだ内容を理解できる程度の表示ラベルを手作業でカードに貼付けていた。

## 【0003】

【発明が解決しようとする課題】この従来のカード書込

み装置では、カードに格納した情報を書換えた際、カードに貼付けされているラベルの記載内容を変更するか、あるいは、記載内容を変更した別のラベルをカードに貼替えるといった手段しかカードに格納した情報が更新されたことを識別する方法がなく、不確実であるとともに、手作業となるため多大の労力を要していた。また、前述の作業を怠った場合には、カードに格納した情報とカードに貼付けられたラベルの記載内容が一致しないことになり、誤ったカードを使用して誤った情報を用いることによる種々の不具合が発生していた。

## 【0004】

【課題を解決するための手段】本発明のカード書込み装置は、カードに設けられた半導体メモリに電氣的にデータを書込むデータ書込部と、前記カードに設けられたリライタブル感熱記録部の視覚的に認識できる表示を書込み、また消去もする印字部とを備えている。

【0005】本発明のカード書込み装置は、カードを載置するカード載置部と、このカード載置部上のカードの端子に電氣的に接続するコンタクトを有し前記カードに設けられた半導体メモリに電氣的にデータを書込むデータ書込部と、前記カード載置部上のカードに設けられたリライタブル感熱記録部にサーマルヘッドを移動させ前記リライタブル感熱記録部の視覚的に認識できる表示を書込み、また消去もする印字部とを備えている。

【0006】本発明のカード書込み装置は、データ書込部はカードに設けられたメモリカードの端子にコンタクトを電氣的に接続し前記メモリカードに内蔵された半導体メモリにデータを書込み、印字部は前記メモリカードに接着されたリライタブルカードからなるリライタブル感熱記録部の表示を書込み、また消去もするようにできる。

【0007】本発明のカード書込み装置は、データ書込部はカードに設けられた IC カードの端子にコンタクトを電氣的に接続し前記 IC カードに内蔵された半導体メモリにデータを書込み、印字部は前記 IC カードに接着されたリライタブルカードからなるリライタブル感熱記録部の表示を書込み、また消去もするようにできる。

【0008】本発明のカード書込み装置は、半導体メモリに書込むデータを識別するための表示をリライタブル感熱記録部に書込み、前記半導体メモリのデータを書換える時は前記リライタブル感熱記録部の表示も書換えるようにできる。

## 【0009】

【発明の実施の形態】次に本発明について図面を参照して説明する。

【0010】図 1 は本発明の実施の形態のカード書込み装置の側断面図である。

【0011】半導体メモリ（図示略）を内蔵したメモリカード 2 とメモリカード 2 の片面の接着されたリライタブル感熱記録材料から成る層を有するリライタブルカー

ド1からなるカード10を案内支持するガイド4が一端を装置本体3に設けられた開口部に接して装置本体3内に設けられている。メモリカード2の一側面には半導体メモリに接続する端子が設けられ、ガイド4他端には制御部5とガイド4に挿入されたメモリカード2の端子とを接続するコネクタ6が配置されている。

【0012】装置本体3内のガイド4の上部にはサーマルヘッド71、サーマルヘッド支持部材72、パネ73、リードブロック74から構成されるサーマルヘッド支持部7、およびギヤ列81、スクリュウシャフト82、駆動モータ83で構成されるサーマルヘッド移動手段8とから成る感熱式リライタブルカードの印字部9が設けられている。

【0013】スクリュウシャフト82は装置本体3に対し固定のブラケットに軸支されてガイド4に平行に配置され、ギヤ列81を介して駆動モータ83により回転させられる。リードブロック74は図示しない軸に案内されスクリュウシャフト82の回転に従いスクリュウシャフト82の方向に移動する。サーマルヘッド71は上下動可能なようにリードブロック74に保持され、はね73により下向きに付勢されているが、カード10のガイド4への挿入時にはカム機構などによりガイド4内から回避させられる。サーマルヘッド71は、ガイド4に挿入されたカード10のリライタブルカード1に圧接されながら駆動モータ83の駆動によりリライタブルカード1上を移動する。

【0014】メモリカード2に格納された情報を書換える場合、カード10をガイド4に挿入しメモリカード2の端子をコネクタ6に装着し、メモリカード2と制御部5とを接続して制御部5からメモリカード2へのアクセスを可能にする。制御部5により新たな情報がメモリカード2に書込まれる際、制御部5によりメモリカードに書込んだ情報の内容を操作者に認識可能なレベルまで編集した情報などのメモリカード2に書込んだ情報を識別するための表示が印字部9に送られ、この新しい表示でサーマルヘッド指示部7、およびサーマルヘッド移動手段8が動作してカード10のリライタブルカード1の表示を書換える。

【0015】この実施の形態では、リライタブルカード1の表示を書換えるのにサーマルヘッドが移動する方式を説明したが、カードを移動しサーマルヘッドを固定する方式としても何等問題はない。

【0016】図2は本発明の他の実施の形態のカード書き込み装置の側断面図である。

【0017】半導体メモリ及びこの半導体メモリを制御するマイクロコンピュータ（図示略）を内蔵したICカード22とICカード22の片面に接着されたリライタブル感熱記録材料から成る層を有するリライタブルカード21からなるカード30を案内支持するガイド25が一端を装置本体29に設けられた開口部に接して装置本

体29内に設けられている。

【0018】ICカード22の表面にはマイクロコンピュータに接続する端子が設けられこの端子とICカード22のデータを書込み、消去するICカード書き込み装置24とを接続するためのコンタクト（図示略）がガイド25に設けてある。

【0019】装置本体29内のガイド25の上部には、図1に示した形態と同様にサーマルヘッド261、サーマルヘッド支持部材262、パネ263、リードブロック264から構成されるサーマルヘッド支持部26、およびギヤ列271、スクリュウシャフト272、駆動モータ273で構成されるサーマルヘッド移動手段27とから成る感熱式リライタブルカードの印字部28が設けられている。

【0020】ICカード22に格納された情報を書換える場合、カード30をガイド25に挿入し、図示しないストッパに当節させてカード30を位置決めし、制御部23からの情報を元にICカード書き込み装置24からICカード22へのアクセスを可能にする。制御部23により新たな情報がICカード22に書込まれる際、制御部23によりICカード22に書込んだ情報の内容を操作者に認識可能なレベルまで編集した情報などのICカード22に書込んだ情報を識別するための表示が印字部28に送られ、この新しい表示でサーマルヘッド支持部26、およびサーマルヘッド移動手段27が動作してカード30のリライタブルカード21の表示を書換える。

【0021】この実施の形態でもリライタブルカード21の表示を書換えるのにカードを移動し、サーマルヘッドを固定する方式としても何等問題はない。

【0022】

【発明の効果】以上説明したように本発明のカード書き込み装置は、半導体メモリおよびリライタブル感熱記録部を設けたカードに、電気的にデータを書込むと同時に視覚的に認識可能な表示を消去可能に書込むことができる。また本発明のカード書き込み装置は、メモリカード、ICカード等の半導体メモリに書込む情報を識別する外観的に識別する表示をメモリカード等に接着したリライタブルカード等のリライタブル感熱部に消去可能に書込むようにしたため、カードにラベルを貼付けたり、半導体メモリに格納した情報を書換えた際、貼付けされているラベルの記載内容を変更するか、あるいは記載内容を変更した別のラベルに貼替えるといった手段をとらずに半導体メモリに書込まれた内容を識別することができるので、手作業による多大の労力をなくすることができる。

【0023】また、半導体メモリに格納した情報とラベルの記載内容が一致しないというようなことがなくなるため、誤ったカードを用いて誤った情報を用いることにより従来発生していた種々の不具合を防ぐことができるという効果を有する。

【図面の簡単な説明】

【図1】本発明の実施の形態のカード書込み装置の側断面図である。

【図2】本発明の他の実施の形態のカード書込み装置の側断面図である。

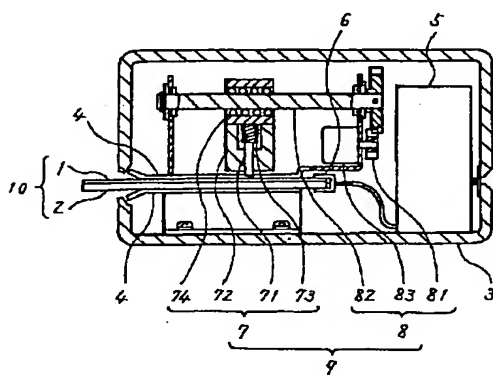
【符号の説明】

- 1 リライタブルカード
- 2 メモリカード
- 4 ガイド
- 5 制御部
- 6 コネクタ
- 7 サーマルヘッド支持部
- 7 1 サーマルヘッド
- 8 サーマルヘッド移動手段
- 8 2 スクリューシャフト

- \* 9 印字部
- 10 カード
- 21 リライタブルカード
- 22 ICカード
- 23 制御部
- 24 ICカード書込み装置
- 25 ガイド
- 26 サーマルヘッド支持部
- 26 1 サーマルヘッド
- 10 27 サーマルヘッド移動手段
- 27 2 スクリューシャフト
- 28 印字部
- 30 カード

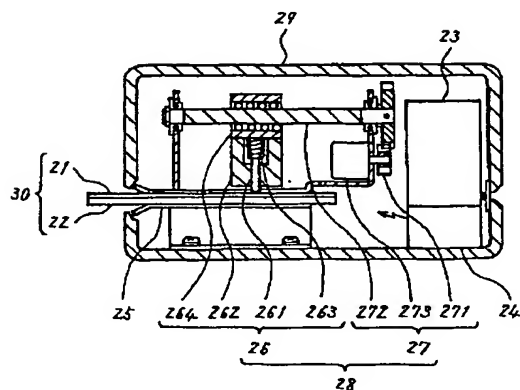
\*

【図1】



- 1 リライタブルカード
- 2 メモリカード
- 4 ガイド
- 5 制御部
- 6 コネクタ
- 7 サーマルヘッド支持部
- 7 1 サーマルヘッド
- 8 サーマルヘッド移動手段
- 8 2 スクリューシャフト
- 9 印字部
- 10 カード

【図2】



- 21 ICカード